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10/510,946	10/27/2004	Wolfgang Lortz	259943US0X PCT	1487
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER FISHER, ABIGAIL L	
			ART UNIT 1616	PAPER NUMBER
			NOTIFICATION DATE 04/25/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/510,946

Applicant(s)

LORTZ ET AL.

Examiner

ABIGAIL FISHER

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 9-11, 14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Receipt of Amendments/Remarks filed on February 5 2008 is acknowledged.

Claims 1-15 are pending. Claims 9-11 and 14-15 are withdrawn as being directed to a non-elected invention. Claims 1-8 and 12-13 are directed to the elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The rejection of claims 1-8 and 12-13 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling when M is hydrogen other species when a covalent bond exists between the oxygen and the M species, does not reasonably provide enablement for when M is a species that results in a salt formation is **withdrawn** in light of Applicant's arguments filed on February 5 2008. Applicant correctly points out that they can be their own lexicographer. The MPEP also indicates that when the meaning of a claim terms away from their ordinary meaning, Applicant must clearly express that intent **Note MPEP 2111.01**. Therefore, since applicant has indicated in the specification, the various species of the salts which one of ordinary skill in the art would readily know to be an ionic bond, the examiner has withdrawn the rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The rejection of claims 1-2, 5-7, and 13 under 35 U.S.C. 102(b) as being anticipated by Wagner et al. (US Patent No. 2951044) is withdrawn in light of Applicant's arguments on February 5 2008 that the particle size of the oxide particles are not distributed symmetrically.

The rejection of claims 1-2, 5-7, and 13 under 35 U.S.C. 102(b) as being anticipated by Kemp et al. (5453267, cited on PTO Form 1449) is withdrawn in light of Applicant's arguments on February 5 2008 that the particle size of the oxide particles are not distributed symmetrically.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.

Art Unit: 1616

3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The rejection of claim 8 under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. is withdrawn in light of Applicant's arguments filed on February 5 2008.

The rejection of claims 3-4, and 12 under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. in view of Kemp et al. (cited on PTO Form 1449) is withdrawn in light of Applicant's arguments filed on February 5 2008.

Claims 1-7 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elsom et al. (WO 90/11067) in view of Gilges et al. (US Patent NO. 6413490), Grinnell (US Patent No. 5799978) and Towery et al. (US Patent No. 6464740).

Applicant Claims

Applicants claim an aqueous dispersion containing pyrogenically produced oxide particles of titanium, zinc, iron, or cerium, having an average particle size of less than 200 nm. The particle sizes of the oxide particles are not distributed symmetrically in the dispersion. The dispersion contains as a dispersing agent at least one (poly)phosphate. The pH is from 4.5 to 7.5. It is noted that applicant has elected titanium dioxide as the elected species of the oxide particles and sodium tripolyphosphate as the dispersing agent.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Elsom et al. is directed to a sunscreen composition which comprises a blend of different particle size of titanium dioxide (abstract). The particle size of the titanium dioxide is between 1 and 100 nm (page 3, lines 10-13). The particles may be uncoated or may be **coated** with an aluminum compound such as aluminum oxide, **aluminum stearate**, aluminum laurate or a **phospholipid** (page 3, lines 14-18). It is disclosed that commercially available titanium dioxide contains a distribution of particle sizes around a mean primary particle size but none alone provide the desired characteristics which is a blend of different particle sizes (page 3-4, lines 31-34 and 1-4). Preferably the composition comprises three different grades of titanium dioxide each having a different mean particle size. Example 1 comprises titanium dioxide with a mean particle size of 15 nm in 2 %, titanium dioxide with a mean particle size of 35 nm in 5%, and titanium dioxide with a mean particle size of 50 nm in 3%. While not explicitly utilizing the terminology "not distributed symmetrically", the example clearly indicates that

Art Unit: 1616

different particle sizes as well as percentages are utilized therefore the particle sizes are necessarily not distributed symmetrically. It is disclosed that the amount of titanium dioxide depends on the use for which the composition is intended but generally the ranges is from 0.5 to 30%. The composition additionally comprises an emulsifier (also known as dispersant) in an amount from 1 to 20% for use in water-in-oil or oil-in water emulsions (page 5, lines 11-22). It is disclosed that the composition may additionally comprise other component well known to those in the art such as emollients, moisturizers, humectants, etc. (page 7-18, lines 29-36 and 1-16). All of these are auxiliary substances or additives.

**Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)**

Elsom et al. does specify that the titanium dioxide is pyrogenically produced. However, this deficiency is cured by Gilges et al.

Gilges et al. is directed to granules based on pyrogenic titanium dioxide (title). The granules are utilized in cosmetics such as sunscreens (abstract). It is disclosed that pyrogenic titanium dioxide is characterized by extremely finely divided particles, a high surface area, very high purity, spherically shaped particles and a lack of pores (Column 1, lines 21-24).

Elsom et al. does not specify that the emulsifier is sodium tripolyphosphate. However, this deficiency is cured by Grinnell.

Grinnell discloses that to disperse pigments, which includes titanium dioxide, dispersing agents are utilized. The dispersing agents polyphosphate compounds such

Art Unit: 1616

as tetrasodium pyrophosphate, sodium hexametaphosphate and sodium tripolyphosphate (column 5, lines 33-36).

Elsom et al. does not specify the pH of the composition. However, this deficiency is cured by Towery et al.

Towery et al. is directed aqueous metal oxide slurries. It is disclosed that adjusting the pH such that a sufficiently high zeta potential is realized imparts stability through columbic interactions (column 3, lines 22-25). It further disclosed that the pH is adjusted to maintain a stable colloid suspension and the pH is adjusted to obtain the required zeta potential on the surface of the oxide particles. The pH is on the order of 0.5 to 11 (column 12, lines 6-12).

***Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)***

It would have been obvious to one of ordinary skill in the art to combine the teachings of Elsom et al. and Gilges et al. and utilize pyrogeically produced titanium dioxide. One of ordinary skill in the art would have been motivated to utilize this type of titanium dioxide because it posses a high surface area and very high purity as taught by Gilges et al.

It would have been obvious to one of ordinary skill in the art to combine the teachings of Elsom et al. and Grinnell and utilize sodium tripolyphosphate to disperse titanium dioxide. One of ordinary skill in the art would have been motivated to utilize this dispersing agent because Grinnell teaches that it is a dispersing agent for titanium dioxide. It would have been obvious to one of ordinary skill in the art to try sodium

Art Unit: 1616

tripolyphosphate as the dispersing agent as a person with ordinary skill has good reason to pursue known options within his or her technical grasp, such as dispersants of titanium dioxide. **Note: MPEP 2141 [R-6] *KSR International CO. v. Teleflex Inc.* 82 USPQ 2d 1385 (Supreme Court 2007).**

It would have been obvious to one of ordinary skill in the art to combine the teachings of Towery et al. and utilize a pH of 0.5 to 11. It would have been obvious to one of ordinary skill in the art to manipulate the pH because Towery et al. teaches that stability is maintained through the pH. Therefore, one of ordinary skill in the art would have been motivated to optimize the pH and the resulting zeta potential to maintain a stable colloid suspension. It would have been obvious to one of ordinary skill in the art at the time of the invention to engage in routine experimentation to determine optimal or workable ranges that produce expected results.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. **In re Aller, 220 F. 2d 454, 105 USPQ 233 (CCPA 1955).**

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Regarding the claimed functional limitation of zeta potential, Elsom et al. and Towery et al. are silent as to the zeta potential. It is the examiners position based on the teachings of Towery et al. that the zeta potential is adjusted by the pH. Since the

Art Unit: 1616

pH is adjusted to maintain a stable colloid suspension, it is the examiner's position that the zeta potential of the prior art is the same if not similar to that instantly claimed. It is incumbent on applicant to demonstrate that the product of the prior art would not necessarily possess the same if not similar zeta potential.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elsom et al. in view of Gilges et al., Grinnell and Towery et al. and in further view of Bleckmann et al. (EP 1557153).

Applicant Claims

Applicant claims the dispersion has a viscosity of less than 2000 mPas at a shear rate of 100 s⁻¹.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Elsom et al., Gilges et al., Grinnell, and Towery et al. are set forth above. Specifically, Elsom et al. discloses a sunscreen formulation comprising a blend of different particle size of titanium dioxide.

Ascertainment of the Difference Between Scope the Prior Art and the Claims (MPEP §2141.012)

Elsom et al. do not specify the viscosity of the composition. However, this deficiency is cured by Bleckmann et al.

Bleckmann et al. is directed to sprayable sunscreens. It is disclosed that sprayable sunscreens prefer a viscosity in the range of 50 to 2000 mPas (paragraph 0014 of the English translation).

***Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)***

It would have been obvious to one of ordinary skill in the art to combine the teachings of Elsom et al., Gilges et al., Grinnell, Towery et al., and Bleckmann et al. and utilize a viscosity between 50 and 2000 mPas. One of ordinary skill in the art would have been motivated to utilize this viscosity when formulating a sprayable sunscreen as it is the preferable viscosity when formulating these type of sunscreens as taught by Bleckmann et al.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

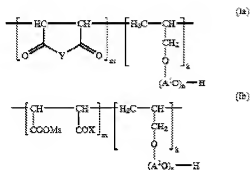
Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-2, 4-8 and 12-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. 10/456276 in view of Kemp et al. is withdrawn in light of Applicant's arguments filed on February 5 2008.

Claims 1-8 and 12-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-13 of copending Application No. 10/512684 in view of Kemp et al. is withdrawn in light of Applicant's arguments filed on February 5 2008.

Claims 1-8 and 12-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 of copending Application No. 10/456277 in view of Kemp et al. is withdrawn in light of the abandonment of the application on January 30 2008.

Claims 1-2, 4-8 and 12-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. 10/456276 in view of Grinnell (US Patent No. 5799978). Copending application '276 claims an aqueous dispersion comprising metal oxide particles and at least one compound of formula I.



The aqueous dispersion comprises 20 to 60% microfine metal oxide particles. The metal oxide particles as claimed include titanium dioxide. The particle size of the particle size is between 10 and 100 nm. The viscosity is between 10 and 40000 mPas. The aqueous dispersion further comprises cosmetic auxiliaries and additives. The copending application '276 does not claim including poly(phosphate) in the dispersion.

Grinnell discloses that to disperse pigments, which includes titanium dioxide, dispersing agents are utilized. The dispersing agents polyphosphate compounds such as tetrasodium pyrophosphate, sodium hexametaphosphate and sodium tripolyphosphate (column 5, lines 33-36).

It would have been obvious to one of ordinary skill in the art combine Copending '276 and Grinnell and utilize polyphosphate compounds such as sodium tripolyphosphate as the dispersing agent. One of ordinary skill in the art would have been motivated to utilize this dispersing agent because Grinnell teaches that it is a dispersing agent for titanium dioxide. It would have been obvious to one of ordinary skill in the art to try sodium tripolyphosphate as the dispersing agent as a person with ordinary skill has good reason to pursue known options within his or her technical grasp,

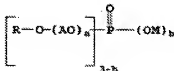
Art Unit: 1616

such as dispersants of titanium dioxide. **Note: MPEP 2141 [R-6] *KSR International CO. v. Teleflex Inc.* 82 USPQ 2d 1385 (Supreme Court 2007).**

It would have been obvious to one of ordinary skill in the art to optimize the pH of the formulation. One of ordinary skill would have been motivated to do this because copending '276 is a cosmetic formulation and therefore will be applied to the skin. A pH too high or too low is known to cause skin irritation. Therefore, it would have been obvious to one of ordinary skill in the art to manipulate the pH to a physiologically compatible pH. Thereby resulting in the instant application with a reasonable expectation of success.

This is a provisional obviousness-type double patenting rejection.

Claims 1-8 and 12-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-13 of copending Application No. 10/512684 in view of Grinnell. Copending application '684 claims an aqueous dispersion comprising pyrogenically prepared oxide particles of metals. The dispersion particles are less than 250 nm. The dispersion contains at least one dispersant of formula I and/or at least one copolymer of general formula IIa.



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Art Unit: 1616

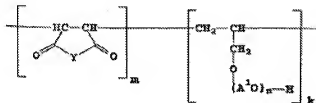


Fig. 1a

The metal oxide particles include titanium oxide. The metal oxide particles in the dispersion are from 20 to 60%. The pH of the dispersion is in the range of 4.5 to 7.5. The zeta potential of the dispersions is less than -20 mV. The copending application '684 does not claim including poly(phosphate) in the dispersion.

The teachings of Grinnell. are set forth above.

It would have been obvious to one of ordinary skill in the art combine Copending '684 and Grinnell and utilize polyphosphate compounds such as sodium tripolyphosphate as the dispersing agent. One of ordinary skill in the art would have been motivated to utilize this dispersing agent because Grinnell teaches that it is a dispersing agent for titanium dioxide. It would have been obvious to one of ordinary skill in the art to try sodium tripolyphosphate as the dispersing agent as a person with ordinary skill has good reason to pursue known options within his or her technical grasp, such as dispersants of titanium dioxide. **Note: MPEP 2141 [R-6] KSR International CO. v. Teleflex Inc.** 82 USPQ 2d 1385 (Supreme Court 2007).

This is a provisional obviousness-type double patenting rejection.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABIGAIL FISHER whose telephone number is (571)270-3502. The examiner can normally be reached on M-Th 9am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abigail Fisher
Examiner
Art Unit 1616

AF

/Mina Haghighatian/
Primary Examiner

